

Slip ASAP - JAN 30
128137

Work Order ID 128137

Thursday, January 08, 2015 9:09:16 AM

Page 1

Item ID: D350-636-016

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Skidtube RH with Run-on Landing Wearplates, DART (Apical) Cylindrical/Aerazur Float Compatible

Start Date: 1/8/2015 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 1/8/2015 Req'd Qty: 1.00 *1*

Customer:

Reference:

Approvals: Process Plan: MLJ Date: 1501-08 Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start *NR1*
Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D4168-042	B	<u>SL</u>						<u>MLJ</u>	<u>1502-02</u>

100

Document Control

0.00

100

DC

DOCUMENT CONTROL

Memo

0.00

Doc.Control -USB or Paperwork

record fwd angle:

89.6° DGC 15-1-19

Photocopy blue file and type labels per PPP D350-636-016 CHG 005

(1X)

DAS
46
9-89

FEB 02 2015

Work Order ID 128137

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Thursday, January 08, 2015 9:09:16 AM

Item ID: D350-636-016

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Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Skidtube RH with Run-on Landing Wearplates, DART (Apical) Cylindrical/Aerazur Float Compatible

Start Date: 1/8/2015 Start Qty: 1.00

1

Cust Item ID:

Required Date: 1/8/2015 Req'd Qty: 1.00

1

Customer:

Reference:

Run Start

NR1

Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop

NR2

QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID
110

Operation
Description

Set Up/
Run Hours
0.00

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

110

Skidtubes

Skidtubes

Skidtubes

Memo

0.00

1- Pick D2600-3 Bent

2- Deburr FWD and AFT ends, remove bending marks. Scribe batch# inside AFT end per dwg D4168

3- Drill pilot holes for blade fitting bolt holes using DT8983. Start with 3/16", then open to 0.500" using center drill then ream holes using 0.500" reamer. PIN first side. Repeat process on second side.

ENSURE PROPER POSITIONING FWD BEND MUST BE FACING UP WHEN DRILLING FIRST SIDE

4- Locate DT8329 off of blade fitting bolt holes and drill pilot holes for blade fitting, section R-R and open to 0.500"

5- Drill fwd step holes using DT9616. Ensure proper positioning. All holes as per dwg D4168 Detail J

6- Drill most FWD wearplate hole using DT9678 locating of 66.54" hole

7- Open up holes of Detail J to 0.297" (total of 2 holes per side) +.201" (total of one hole per side) as per dwg D4168.

8- Weld D2744 Cap as per Dwg D4168 and QSI 004. Fill grooves in bend left from bending as per QSI 004

A/R Aluminum Rod batch: m130812

9- Grind welds flush as per Dwg D4168

DGL 15-1-8
DGL 15-1-8
DGL 15-1-19
PTG

78R15-01-19

DQA:

Date:

15/05/05

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed:

Date:

Work Order update only ☐

Work Order: <u>128137</u>	DISPOSITION Rework ☐ Scrap ☒ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS			
Part No. <u>D-350-636-016</u>		Skid-tube ☒	Crosstube ☐	Water Jet ☐	Engineering ☐
NCR No. <u>15-4854</u>		Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐
		Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
	Large Fab ☐	Composite ☐	Supplier ☐		

Root Cause		Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design		15-1-13	110	1	Rear Blade Fitting Bolt holes do not align line up. PC. Old Process of manufacture	S Q2012 15/01/13	Scrap & Replace. Process has been rectified.	D 15-1-13	Doc 15-1-13	S. 15/01/13
Doc/Data										
Equip/Tooling										
Handling/Pre										
Material										
Operator										
Offset/Setup										
Process	X									
Supplier										
Training										
Transport										
Unapproved										

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge ☒ Other <u>Old Process of Manufacture</u>	☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled
--	--	---	--	--

DART AEROSPACE LTD	Work Order:	
Description: Repair Scheme D119-646-241 Skid tubes FWD GHW holes do not align NCR 14-3771 For tubes in production and Returned tubes		
Drawing: D3887	Repair Scheme:	RS1015
Part No: D119-646-241	Page:	1 of 1
Batch No:	Qty:	1

Step	Location	Procedure	By	Date	Qty
1	Finishing	Remove FWD & AFT caps D2855-3. Clean all sikaflex off cap & identify per each tube caps was removed (P/N & B#)			
2	Skidtube	Drill out & remove FWD Cross bolt spacers D2579 in Detail C on Dwg D3887			
3	Skidtube	Reposition location of holes as per Drawing but using <u>+/-0.005" tol</u> and per symmetrical in QSI 018			
4	Skidtube	TACK ONLY Cross bolt spacers D2579 B_____			
5	QC	Location MUST be verified by QC Record Dims HERE			
6	Skidtube	Weld as per QSI 004 A/R_____ Back Drill Grind welds flush & deburr			
7	QC	QC 10 & 5 Inspection ***TEST FIT GHW WHEELS*** Pass ☐			
8	Finishing	Touch up alodine as per QSI 005			
9	Finishing	Touch up Powder coat per QSI 005			
10	Finishing	Re-assemble original caps back on tubes Sikaflex B_____ exp_____			
11	QC	QC 3 inspect			
12	QC	QC 5 inspect			
13	QC	QC21			

Rev	Date	Change Description	Prepared	Checked	Approved
A	14.04.29	New Issue	ED		

Work Order ID 128137***128137***

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Item ID: D350-636-016

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Skidtube RH with Run-on Landing Wearplates, DART (Apical) Cylindrical/Aerazur Float Compatible

Start Date: 1/8/2015 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 1/8/2015 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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120	QC10- Inspect visual per QSI004- ground welds	0.00							
-----	---	------	--	--	--	--	--	--	--

120

QC Memo 0.00

Quality Control

DAS
38
9-89

JAN 21 2015

130	QC5- Inspect part completeness to step on W/O	0.00							
-----	---	------	--	--	--	--	--	--	--

130

QC Memo 0.00

Quality Control

DAS
38
9-89

JAN 21 2015

140	Chemical Conversion Coat per QSI005 4.1	0.00							
-----	---	------	--	--	--	--	--	--	--

140

HandFinish Memo 0.00

Hand Finishing

B-1-21
JAN 21 2015

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N900040100

Setup Start

NS1

Revision ID:

Item Name: Skidtube RH with Run-on Landing Wearplates, DART (Apical) Cylindrical/Aerazur Float Compatible

Stop

NS2

Start Date: 1/8/2015

Start Qty: 1.00

1

Cust Item ID:

Required Date: 1/8/2015

Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID
150

Operation
Description
QC7-Inspect Chemical Conversion Coat

Set Up/
Run Hours
0.00

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

**DAS
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9-89**

150

QC

Memo

0.00

Quality Control

1 0 15-01-22

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N900040100

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NS2

Item Name: Skidtube RH with Run-on Landing Wearplates, DART (Apical) Cylindrical/Aerazur Float Compatible

Start Date: 1/8/2015 Start Qty: 1.00

1

Cust Item ID:

Required Date: 1/8/2015 Req'd Qty: 1.00

1

Customer:

Reference:

Run Start

NR1

Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop

NR2

QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID
160

Operation
Description

Set Up/
Run Hours
0.00

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

160

Skidtubes

Skidtubes

Skidtubes

Memo

0.00

1-Open up holes using hole saw of Detail L and ground handling to 0.625" (total of 8 holes per side) as per dwg D4168.

2-Open up holes using hole saw of Detail K to 0.750" (total of 4 holes per side) as per dwg D4168.

3- Open float hole to 0.500" using uni-bit (4 per side) and Run on wearplate holes to .375" 4 per side

4-Chamfer holes of Detail K,L, ground handling and float holes per dwg D4168 (welding instructions on sheet 9)

5-Deburr and blow out all chips from inside of tube

6- Prepare tube for welding, remove alodine as required.

7-Bond web D2739 in place as per QSI 015, let cure for 12hrs.

A/R Sikaflex-291 batch: 131120
exp. date: 15-10-21

8- Weld spacers D3490-1, D3490-3 and D2743 as per dwg D4168 & QSI004 (welding instructions on sheet 8)

A/R Aluminum Rod batch: M130812

9- At section AP-AP drill out x-bolt spacer to 0.404"

10-Grind welds flush as per Dwg D4168

DGL 15-1-22.

7 BE-15-01-27
15-1-27 JH

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Thursday, January 08, 2015 9:09:16 AM

Item ID: D350-636-016

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N900040100

Setup Start ***NS1***

Revision ID:

Item Name: Skidtube RH with Run-on Landing Wearplates, DART (Apical) Cylindrical/Aerazur Float Compatible

Stop ***NS2***

Start Date: 1/8/2015 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 1/8/2015 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date:

Run Start ***NR1***

QC: Date: SPC (Y/N): Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

11-Spot face ground handling holes section (total of 4 places per side) as per dwg D4168

15-1-27 *JK*

12- C'bore section CH-CH. ADJUST TOOLING AS REQUIRED.
VERF BY: _____

15-1-27 *JK*

13- Deburr holes, ensure tube is free of all scratches before sending to paint.

15-1-27 *JK*

***** FOR DELUXE SKIDTUBE IF APPLICABLE DRILL TOW RING
HOLE IN TUBE *****
*****REF TO W/O BATCH: *****

170 QC10- Inspect visual per QSI004- ground welds 0.00

170

QC

Memo

0.00

Quality Control

15-01-27

DAS
9
9-88

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Thursday, January 08, 2015 9:09:16 AM

Item ID: D350-636-016

Accept

N900040100

Setup Start *NS1*

Revision ID:

Item Name: Skidtube RH with Run-on Landing Wearplates, DART (Apical) Cylindrical/Aerazur Float Compatible

Stop *NS2*

Start Date: 1/8/2015 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 1/8/2015 Req'd Qty: 1.00 *1*

Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date: QC: Date: SPC (Y/N): Date:

Run Start *NR1*

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180	QC5- Inspect part completeness to step on W/O	0.00							
180									
QC	Memo	0.00							DAS 9-89
Quality Control	***VERIFY C'BOARD IS GOOD***								
190	Pressure Wash per QSI005 4.3	0.00							
190									
HandFinish	Memo	0.00							
Hand Finishing	Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.								
200		0.00							DAS 41 9-89
200									
SprayPaint	Memo	0.00							
Spray Painting	1- PRIME AS PER DWG AND QSI 005 4.2 PRIMER PRC DESOTO 515X349 BATCH: 128975								15-1-29
	2- PAINT WHITE AS PER DWG AND QSI 005 4.2 PAINT BATCH: 131122								

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Item ID: D350-636-016 Accept *N900040100* Setup Start *NS1*
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 Item Name: Skidtube RH with Run-on Landing Wearplates, DART (Apical) Cylindrical/Aerazur Float Compatible

Start Date: 1/8/2015 Start Qty: 1.00 *1* Cust Item ID:
 Required Date: 1/8/2015 Req'd Qty: 1.00 *1* Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210 *210* QC Quality Control	QC14- Inspect Spray Paint Memo Inspect for foreign object per QSI 024	0.00 0.00				1.24	0	11/15/13	DAS 15 9-89
230 *230* HandFinish Hand Finishing	HandFinishing Memo 1- Install inserts as per Dwg D4168 2-Inspect for Foreign Objects 3-Install blade fitting D3488-041, wearshoes and ground handling hardware as per dwg D4168 SIKA FLEX 241 BATCH: <u>131126</u> EXP DATE: <u>15108</u> 4-assemble o'ring to plug as per dwg D3492 and apply o'ring lube A/R 55-o'ring lube batch: <u>11129305</u> RTU 598136 x 11125792 exp 10-1 5-Coat all exposed fasteners with "LPS Procyon" batch: <u>10122960</u>	0.00 0.00				1.11	0	11/15/13	

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Thursday, January 08, 2015 9:09:16 AM

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Start Date: 1/8/2015 Start Qty: 1.00 *1* Cust Item ID:

Required Date: 1/8/2015 Req'd Qty: 1.00 *1* Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date: Run Start *NR1*
 QC: Date: SPC (Y/N): Date: Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
240	QC5- Inspect part completeness to step on W/O	0.00							DAS 38 9-89
240									
QC	Memo	0.00							
Quality Control									JAN 30 2015
250	Pick Kit	0.00							
250									FEB 01 2015
Packaging	Memo	0.00							Sh
Packaging	If making a D350-636-216 pick kit will only requires: 1 X AN3C37A 1 X AN3C34A 1 X AN3C42A 2 X D3493-1								
260	QC4- 100% Inspect kits for completeness	0.00							DAS 46 9-89
260									FEB 02 2015
QC	Memo	0.00							(1x)
Quality Control	*****ensure antiseize is on AN8C21A bolts*****								

Work Order ID 128137

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Thursday, January 08, 2015 9:09:16 AM

Item ID: D350-636-016

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N900040100

Setup Start

NS1

Revision ID:

Item Name: Skidtube RH with Run-on Landing Wearplates, DART (Apical) Cylindrical/Aerazur Float Compatible

Stop

NS2

Start Date: 1/8/2015 Start Qty: 1.00

1

Cust Item ID:

Required Date: 1/8/2015 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

NR1

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
270	Packaging	0.00							
270									
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPPD350-636-016								
	Location: _____								
	PPP rev: _____								
280	QC21- Final Inspection - Work Order Release	0.00							
280									
QC	Memo	0.00							
Quality Control									

DAS

46

9-89

FEB 02 2015

MCS 15-02-02

15-2-2

Print

Thursday, January 08, 2015 9:09:23 AM

Page 1

Work Order ID: 128137

128137

Parent Item: D350-636-016

D350-636-016

Parent Item Name: Skidtube RH with Run-on Landing Wearplates, DART (Apical)
Cylindrical/Aerazur Float Compatible

Start Date: 1/8/2015

Required Date: 1/8/2015

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP rev:A 10.09.28 new issue DD verf:EC IPP Rev:B
11.04.14 ecn11-553 DD verf:EC IPP Rev:C 11.10.18 as
per NCR 11-906 DD verf:EC IPP REV:D 13.08.28 PER ECN13-
594 DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D3490-1		Manufactured	No			160	Each	117.0000	4	4			
D3490-1									**				
Cross Bolt Spacer													
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				LG001		117							
				(25902)		117							
D3490-3		Manufactured	No			160	Each	107.0000	4	4			
D3490-3									**				
Cross Bolt Spacer													
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				LG001		107							
				(25903)		107							
AN3C34A		Purchased	No			230	Each	13.0000	1	1			
AN3C34A									**				
BOLT													
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				ST347		13							
				m127044		13							

BE15-01-27

BE15-01-27

15/6/130

Picklist Print

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D350-636-016

Parent Item Name: Skidtube RH with Run-on Landing Wearplates, DART (Apical)
Cylindrical/Aerazur Float Compatible

Start Date: 1/8/2015

Required Date: 1/8/2015

AN3C36A

Purchased

No

230

Each

Start Qty: 1.00
145.0000 4 4

Required Qty: 1.00

AN3C36A

Bolt

**

all 15/01/30

Location

Loc Qty

Loc Code

FG

24

101261

4

116590

10

122204

10

FP001

27

m129907

27

ST338a

50

m130874

50

ST348

44

m129907

44

XJ

AN3C37A

Purchased

No

230

Each

170.0000

**

1

AN3C37A

BOLT

DAS 46
9-89

Shop
FEB 01 2015

Location

Loc Qty

Loc Code

ST338a

170

M128773

80

M129650

90

1

AN3C42A

Purchased

No

230

Each

40.0000

**

1

AN3C42A

Bolt

DAS 46
9-89

Shop
FEB 01 2015

Location

Loc Qty

Loc Code

FG

5

121103

5

ST347

35

m130460

5

m130485

30

1

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Shop Packet Print

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Picklist Print

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Parent Item Name: Skidtube RH with Run-on Landing Wearplates, DART (Apical)
Cylindrical/Aerazur Float Compatible

Start Date: 1/8/2015

Required Date: 1/8/2015

D3488-042	Manufactured	No	230	Each	2.0000	1	1	Start Qty: 1.00	Required Qty: 1.00
D3488-042								**	
Blade Fitting RH									ll 15/6/13.0

			<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>				
			FP001	2	B125900				x1
			125901	2					
D3492-1	Manufactured	No		230	Each	173.0000	8	8	
D3492-1								**	ll 15/6/13.0
Plug									

			<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>				
			FP001	173					
			125904	173					x8
D3492-3	Manufactured	No		230	Each	194.0000	8	8	
D3492-3								**	ll 15/6/13.0
Plug									

			<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>				
			FP001	194					
			125905	194					x2
D3873-1	Manufactured	No		230	Each	91.0000	7	7	
D3873-1								**	ll 15/6/13.0
Bushing									

			<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>				
			FP001	42					
			124192	42					
			ST063	49					
			126709	49					x7

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Shop Packet Print

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Picklist Print

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Work Order ID: 128137

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Parent Item: D350-636-016

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Parent Item Name: Skidtube RH with Run-on Landing Wearplates, DART (Apical)
Cylindrical/Aerazur Float Compatible

Start Date: 1/8/2015

Required Date: 1/8/2015

D4154-041

Manufactured No

230 Each

7.0000

Start Qty: 1.00

Required Qty: 1.00

1 1

D4154-041

Wearplate Assembly

**

all stock

Location

Loc Qty

Loc Code

FP002

7

120226

7

D4170-1

Manufactured No

230 Each

166.0000

4

X1
4

D4170-1

Bushing

**

BERT-01-27

Location

Loc Qty

Loc Code

LG001

166

107896

89

119639

44

123940

33

D4171-1

Manufactured No

230 Each

7.0000

1

4

D4171-1

Bushing

**

all stock

Location

Loc Qty

Loc Code

ST096

7

125038

7

MS21043-3

Purchased No

230 Each

426.0000

5

X1
5

MS21043-3

Nut

**

all stock

Location

Loc Qty

Loc Code

FG

80

103691

80

FP001

294

m130673

294

GA

52

m130673

52

X5

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Picklist Print

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Page 5

Work Order ID: 128137

128137

Parent Item: D350-636-016

D350-636-016

Parent Item Name: Skidtube RH with Run-on Landing Wearplates, DART (Apical)
Cylindrical/Aerazur Float Compatible

Start Date: 1/8/2015

Required Date: 1/8/2015

NAS1149C0363R

Purchased

No

230

Each

962.0000

9

9

Start Qty: 1.00

Required Qty: 1.00

NAS1149C0363R

Washer

**

all 1/5/01/30

Location

Loc Qty

Loc Code

FP001

221

114742

221

GA

228

m130673

228

ST271

513

m130673

513

X 9

NAS1515H3L

Purchased

No

230

Each

687.0000

4

4

***NAS1515H3I ***

Washer

**

all 1/5/01/30

Location

Loc Qty

Loc Code

FG

40

102472

40

FP001

91

m127831

91

ST266

556

m127831

56

m130726

500

X 4

NAS1611-010

Purchased

No

230

Each

172.0000

8

8

NAS1611-010

O-RING

**

all 1/5/01/30

Location

Loc Qty

Loc Code

FP001

172

m130797

172

X 8

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Thursday, January 08, 2015 9:09:24 AM

Work Order ID: 128137

128137

Parent Item: D350-636-016

D350-636-016

Parent Item Name: Skidtube RH with Run-on Landing Wearplates, DART (Apical)
Cylindrical/Aerazur Float Compatible

Start Date: 1/8/2015

Required Date: 1/8/2015

NAS1611-013

Purchased

No

230

Each

Start Qty: 1.00
942.0000 8 8

Required Qty: 1.00

NAS1611-013

O-RING

**

lll 15/01/13

Location

Loc Qty

Loc Code

FP001

942

m130758

942

NAS1149D0863J

Purchased

No

250

Each

758.0000

**

2

2

NAS1149D0863J

Washer

DAS
46
9-89

Location

Loc Qty

Loc Code

FP001

57

125484

57

ST260a

700

125268

600

125635

100

st268

1

125268

1

D2744

Manufactured

No

110

Each

38.0000

**

D2744

Cap

Location

Loc Qty

Loc Code

LG001

38

125894

38

D2600-3-BENT-RH

Manufactured

No

110

Each

4.0000

**

D2600-3-BENT-RH

Extrusion Bent RH

Location

Loc Qty

Loc Code

LG002

4

125888

4

125888

Doc 15-1-8.

1

Doc 15-1-09.

Thursday, January 08, 2015 9:09:25 AM

Shop Packet Print

Picklist Print

Thursday, January 08, 2015 9:09:25 AM

Page 7

Work Order ID: 128137

128137

Parent Item: D350-636-016

D350-636-016

Parent Item Name: Skidtube RH with Run-on Landing Wearplates, DART (Apical)
Cylindrical/Aerazur Float Compatible

Start Date: 1/8/2015

Required Date: 1/8/2015

D2743 Manufactured No

160 Each

Start Qty: 1.00
155.0000 8 8

Required Qty: 1.00

D2743

Crossbolt Spacer

**

BE 15-01-27
B 128350 x5

Location

Loc Qty

Loc Code

LG001

155

125893

8

127636

147

D2739 Manufactured No

160 Each

10.0000 1 1

D2739

350 I Beam

**

DGC 15-1-22

Location

Loc Qty

Loc Code

LG003

10

125858

10

125889

ALS4-1032-225 AELS8-1032-225 Purchased No

230 Each

1,546.000 4 4

ALS4-1032-225

Rivnut

**

all 1510130

Location

Loc Qty

Loc Code

FG

120

M127028

120

FP001

622

M131067

622

st549

804

M131067

804

x4

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Shop Packet Print

Page 7

Picklist Print

Thursday, January 08, 2015 9:09:25 AM

Page 8

Work Order ID: 128137

128137

Parent Item: D350-636-016

D350-636-016

Parent Item Name: Skidtube RH with Run-on Landing Wearplates, DART (Apical)
Cylindrical/Aerazur Float Compatible

Start Date: 1/8/2015

Required Date: 1/8/2015

AN8C35A

Purchased

No

230

Each

25.0000

Start Qty: 1.00

Required Qty: 1.00

AN8C35A

Bolt

**

all 15/01/30

Location

Loc Qty

Loc Code

FG

5

M131307

XL

121275

5

FP001

20

m130114

1

m130784

19

AN6C44A

Purchased

No

230

Each

102.0000

4

4

AN6C44A

Bolt

**

all 15/01/30

Location

Loc Qty

Loc Code

FG

2

M131307

XL

103964

2

FP001

4

m130863

4

ST286A

17

m130863

17

ST332

11

m130863

11

ST333

68

m131151

68

MS21083C8

Purchased

No

230

Each

114.0000

1

1

MS21083C8

Nut

**

all 15/01/30

Location

Loc Qty

Loc Code

ST300

114

m131049

114

XL

Thursday, January 08, 2015 9:09:25 AM

Shop Packet Print

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Picklist Print

Thursday, January 08, 2015 9:09:25 AM

Page 9

Work Order ID: 128137

128137

Parent Item: D350-636-016

D350-636-016

Parent Item Name: Skidtube RH with Run-on Landing Wearplates, DART (Apical)
Cylindrical/Aerazur Float Compatible

Start Date: 1/8/2015

Required Date: 1/8/2015

D3631-1 Manufactured No 230 Each 170.0000 8 8

Start Qty: 1.00

Required Qty: 1.00

D3631-1

Washer

**

all 15/01/38

Location Loc Qty Loc Code

FP001 13128326 170
125912 170

*x6
x2*

NAS1149C0332R Purchased No 230 Each 4,371.000 4 4

NAS1149C0332R

WASHER

**

all 15/01/38

Location Loc Qty Loc Code

FP001 2581
m130325 2581
GA 126
125654 126
ST271 1664
m130325 664
m130466 1000

x4

D2745 Manufactured No 230 Each 76.0000 8 8

D2745

Bushing

**

all 15/01/38

Location Loc Qty Loc Code

ST010 76
125895 76

13127585

x8

NAS1149C0832R Purchased No 230 Each 189.0000 1 1

NAS1149C0832R

Washer

**

all 15/01/38

Location Loc Qty Loc Code

FP001 45
m114915 45
ST271 144
m125807 144

v1

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Shop Packet Print

Page 9

Picklist Print

Thursday, January 08, 2015 9:09:25 AM

Work Order ID: 128137

128137

Parent Item: D350-636-016

D350-636-016

Parent Item Name: Skidtube RH with Run-on Landing Wearplates, DART (Apical)
Cylindrical/Aerazur Float Compatible

Start Date: 1/8/2015

Required Date: 1/8/2015

AN3C6A Purchased No

230 Each

Start Qty: 1.00
608.0000 4 4

Required Qty: 1.00

AN3C6A

Bolt

**

ell cslod36

Location	Loc Qty	Loc Code
CA	39	
m128704	39	
FG	10	
122416	10	
FP001	118	
m128769	118	
ST338a	441	
m128769	441	

vc

MS21043-6 Purchased No

230 Each

206.0000 4 4

MS21043-6

NUT

**

ell cslod36

Location	Loc Qty	Loc Code
FG	20	
103693	20	
FP001	186	
m130325	6	
m130726	180	

KJ

D3493-1 Manufactured No

250 Each

109.0000 2 2

D3493-1

Washer

**

Smb
FEB 01 2015

Location	Loc Qty	Loc Code
FG	10	
97201	10	
ST046	99	
125906	99	

2

Picklist Print

Thursday, January 08, 2015 9:09:26 AM

Work Order ID: 128137

128137

Parent Item: D350-636-016

D350-636-016

Parent Item Name: Skidtube RH with Run-on Landing Wearplates, DART (Apical)
Cylindrical/Aerazur Float Compatible

Start Date: 1/8/2015

Required Date: 1/8/2015

MS21083C8

Purchased

No

250

Each

114.0000

Start Qty: 1.00

Required Qty: 1.00

MS21083C8

DAS

46

Nut

9-89

**

FEB 01 2015

Location

Loc Qty

Loc Code

ST300

114

114

250

Each

20.0000

**

FEB 01 2015

AN8C21A

Purchased

No

AN8C21A

DAS

46

Bolt

9-89

Location

Loc Qty

Loc Code

FG

2

123966

2

ST332

18

18

250

Each

11.0000

**

FEB 01 2015

D2741

Manufactured

No

D2741

DAS

46

Replacement Blade

9-89

Location

Loc Qty

Loc Code

FG

10

100664

3

113640

2

115522

5

ST538

1

124047

1

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube ☐</td> <td>Crosstube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐															
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐															
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐															
Large Fab ☐	Composite ☐	Supplier ☐																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge ☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other
--	--	---	--

QTY -041	QTY -042	QTY -043	QTY -044	PART NUMBER	DESCRIPTION
X				D4168-041	350 SKIDTUBE ASSEMBLY, LH
	X			D4168-042	350 SKIDTUBE ASSEMBLY, RH
		X		D4168-043	350 SKIDTUBE ASSEMBLY, LH
			X	D4168-044	350 SKIDTUBE ASSEMBLY, RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1				D3488-041	BLADE FITTING, LH
	1		1	D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
8	8	8	8	D3631-1	WASHER
7	7	7	7	D3873-1	BUSHING
1	1	1	1	D4154-041	WEARPLATE ASSEMBLY
				D4168-1	SKIDTUBE WELDMENT, LH
	1			D4168-2	SKIDTUBE WELDMENT, RH
		1		D4168-3	SKIDTUBE WELDMENT, LH
			1	D4168-4	SKIDTUBE WELDMENT, RH
4	4	4	4	D4170-1	SPACER
1	1	1	1	D4171-1	BUSHING
4	4	4	4	ALS4-1032-225	INSERT
4	4	4	4	AN3C6A	BOLT
1	1	1	1	AN3C34A	BOLT
4	4	4	4	AN3C36A	BOLT
4	4	4	4	AN6C44A	BOLT
1	1	1	1	AN8C35A	BOLT
9	9	9	9	AN960C10	WASHER (OR NAS1149CO363R)
4	4	4	4	AN960C10L	WASHER (OR NAS1149CO332R)
1	1	1	1	AN960C816L	WASHER (OR NAS1149CO832R)
5	5	5	5	MS21043-3	NUT
4	4	4	4	MS21043-6	NUT
1	1	1	1	MS21083C8	NUT
4	4	4	4	NAS1515H3L	WASHER

128137-MLJ
1501-08

RELEASED
2013-08-13
JWP

GENERAL NOTES:

- 1) MATERIAL: MAKE D4168-1/-2/-3/-4 FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.
STANDARD: PRIME (REF. 4.2.1.3.3) AND PAINT WHITE PER DART QSI 005 4.2
 A OPTIONAL: POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
 BLACK ANTI-SKID PAINT AS INDICATED TO 1.0" ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: D4168-041/-042/-043/-044 = 32.3 LBS
- 8) WELD PER DART QSI 004
- 9) FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
 MINIMUM YIELD TENSILE STRENGTH = 35 KSI
 MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
- 10) COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF
FINISH WITH MEK DEGREASER.
- 11) SPACER AND PLUG INSTALLED SAME AS SECTION AJ-AJ EXCEPT HORIZONTAL
- 12) SPACER AND PLUG INSTALLED SAME AS SECTION AP-AP EXCEPT HORIZONTAL

B	ADD VIEW TO CONTROL FWD BEND ORIENTATION (ZN D-1-4/-5/-6/-7); UPDATED FINISH OPTIONS. REASON: PAR13-276 AND NCR13-2757	MB	13.07.11
A	NEW ISSUE	SC	10.08.09
REV.	DESCRIPTION	BY	DATE
DESIGN	SC		
DRAWN	JP		
CHECKED	JP		
MFG. APPR.	JP		
APPROVED	JP		
DE APPR.	JP		
DATE	13.07.11		

DART AEROSPACE USA, INC. KENT, WA	
DRAWING NO. D4168	REV. B
TITLE 350 SKIDTUBE ASSEMBLY	SCALE NTS
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8 7 6 5 4 3 2 1

D

D

C

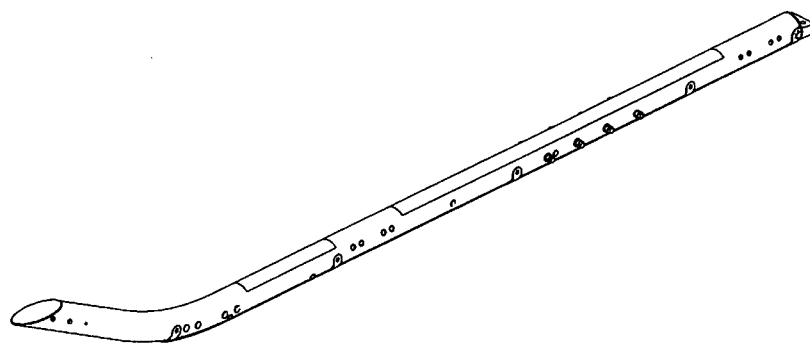
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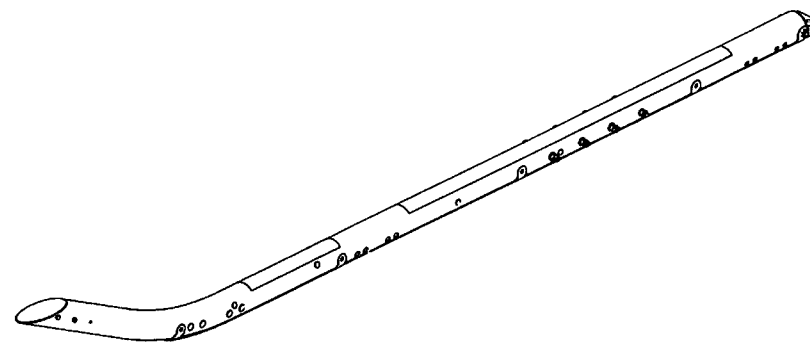
B

A

A



D4168-041 350 SKIDTUBE ASSEMBLY, LH



D4168-042 350 SKIDTUBE ASSEMBLY, RH

RELEASED
2013-08-13
AW

DESIGN
DRAWN
CHECKED
MFG. APPR.
APPROVED
DE APPR.
DATE 13.07.11

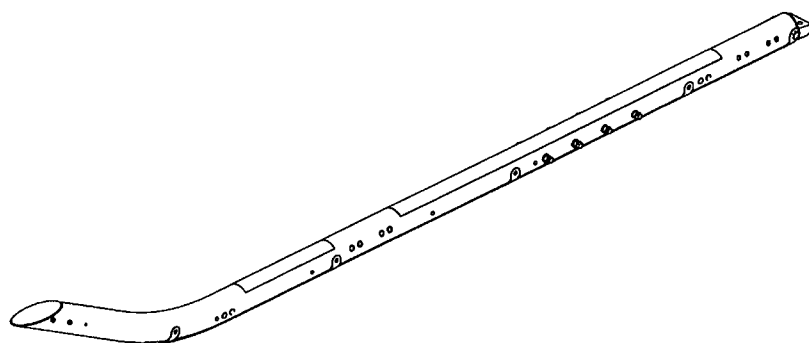
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DART AEROSPACE USA, INC.
KENT, WA

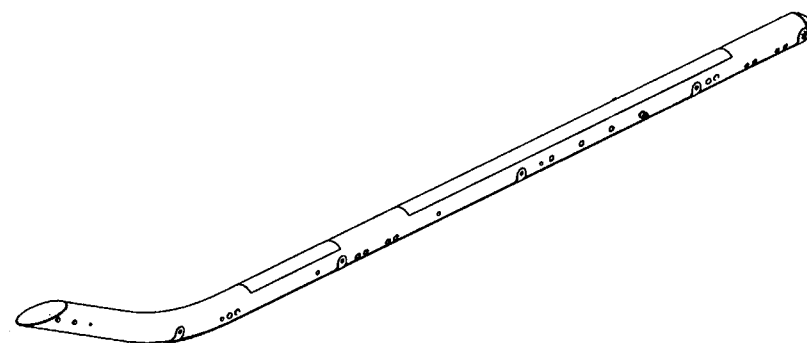
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TITLE 350 SKIDTUBE ASSEMBLY
REV. B
SHEET 2 OF 11
SCALE NTS

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8 7 6 5 4 3 2 1



D4168-043 350 SKIDTUBE ASSEMBLY, LH

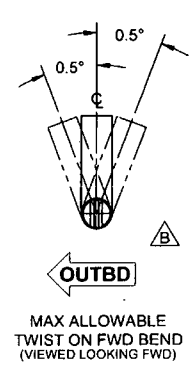
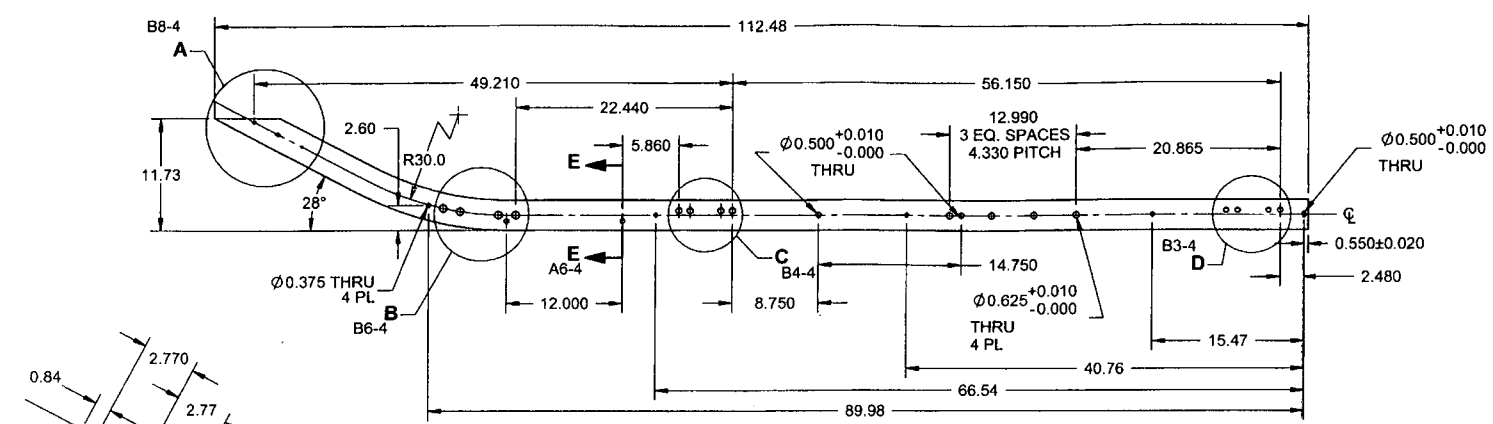


D4168-044 350 SKIDTUBE ASSEMBLY, RH

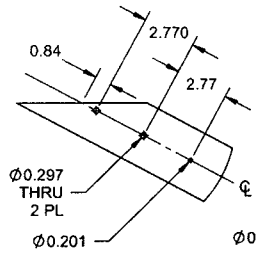
RELEASED
2013-08-13
AND

DESIGN	SC	DART AEROSPACE USA, INC.	
DRAWN		KENT, WA	
CHECKED		DRAWING NO.	REV. B
MFG. APPR.		D4168	SHEET 3 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
DATE	13.07.11	COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR DISCLOSED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

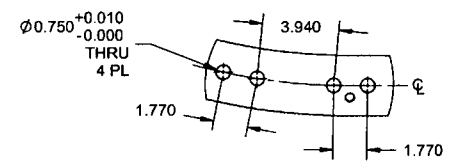
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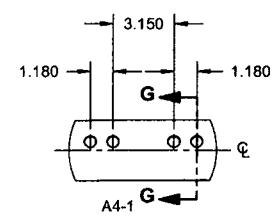
D4168-1 LH SKIDTUBE



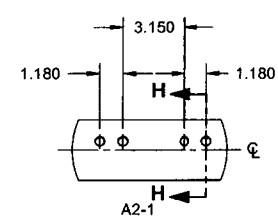
DETAIL A
SCALE 2X



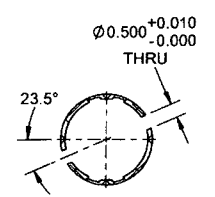
DETAIL B
SCALE 2X



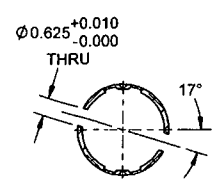
DETAIL C
SCALE 2X



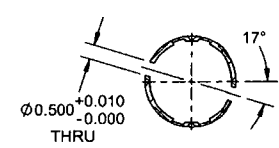
DETAIL D
SCALE 2X



SECTION E-E
SCALE 3X, 2 PL



SECTION G-G
SCALE 3X, 4 PL



SECTION H-H
SCALE 3X, 4 PL

RELEASED
2013-08-13
WP

DESIGN	SC
DRAWN	
CHECKED	
MFG. APPR.	
APPROVED	
DE APPR.	
DATE	13.07.11

DART AEROSPACE USA, INC.
KENT, WA

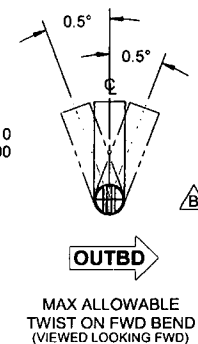
DRAWING NO. **D4168**

TITLE **350 SKIDTUBE ASSEMBLY**

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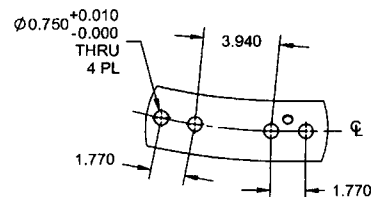
REV. A
SHEET 4 OF 11
SCALE
NTS

8 7 6 5 4 3 2 1

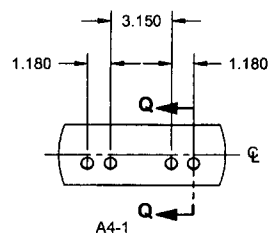


DETAIL J
SCALE 2X

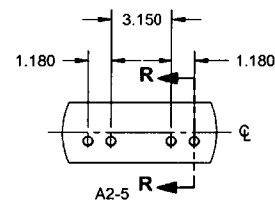
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DETAIL J
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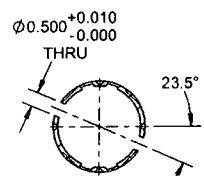
DETAIL K C7-5
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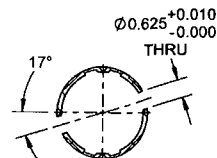
DETAIL L
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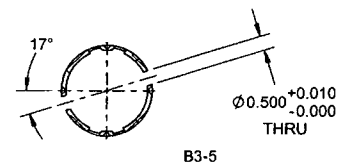
DETAIL M
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SECTION N-N
SCALE 3X, 2 PL



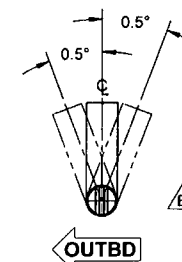
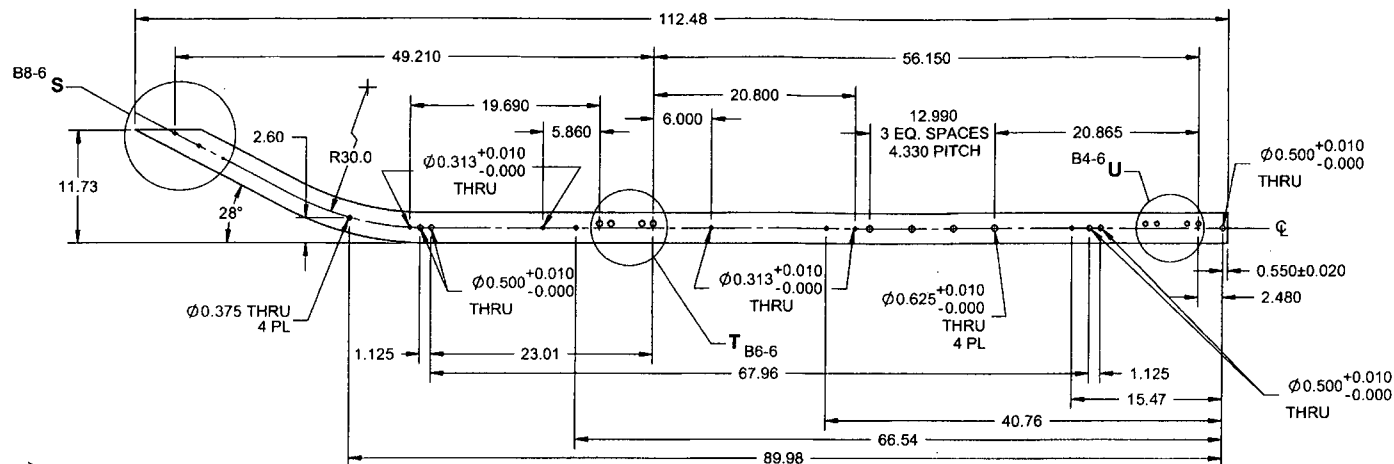
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SCALE 3/8" = 1'-0"



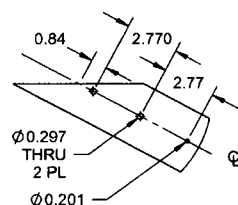
SECTION R-R
SCALE 3X, 4 PL

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CHECKED		DRAWING NO. D4168	REV. B
MFG. APPR.		TITLE	SHEET 5 OF 11
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DE APPR.			NTS
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	13.07.11		

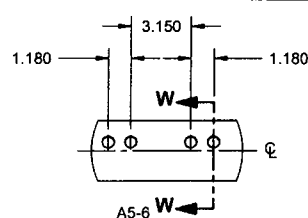
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2013-08-13
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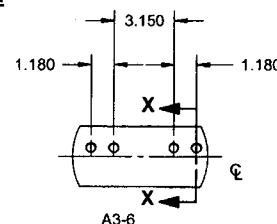
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TWIST ON FWD BEND
(VIEWED LOOKING FWD)



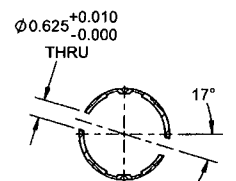
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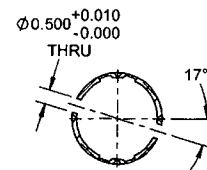
DETAIL T
SCALE 2X



DETAIL U
SCALE 2X



SECTION W-W
SCALE 3X, 4 PL



SECTION X-X
SCALE 3X, 4 PL

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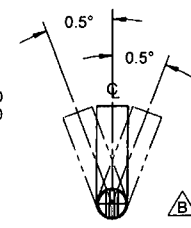
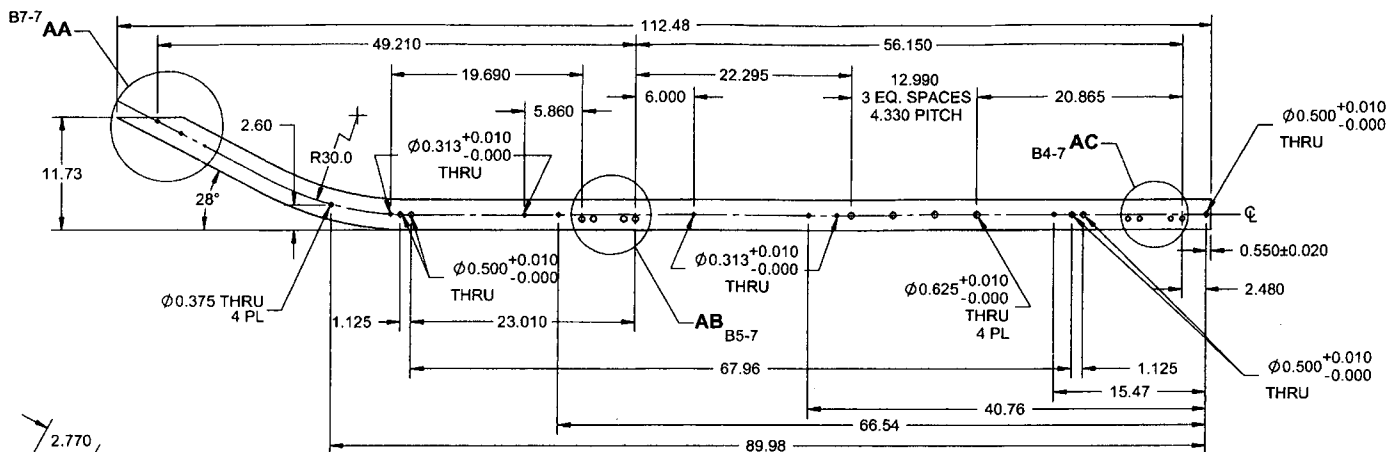
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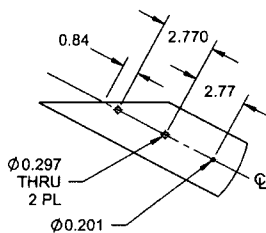
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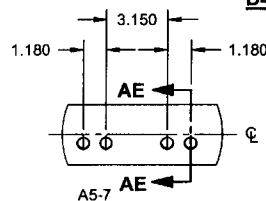


MAX ALLOWABLE
TWIST ON FWD BEND
(VIEWED LOOKING FWD)

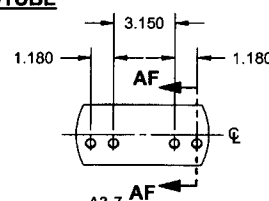
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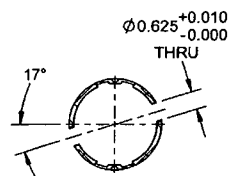
DETAIL AA
SCALE 2X



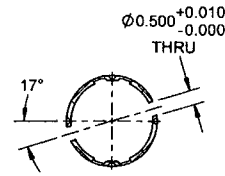
DETAIL AB
SCALE 2X



DETAIL AC
SCALE 2X



SECTION AE-AE
SCALE 3X, 4 PL



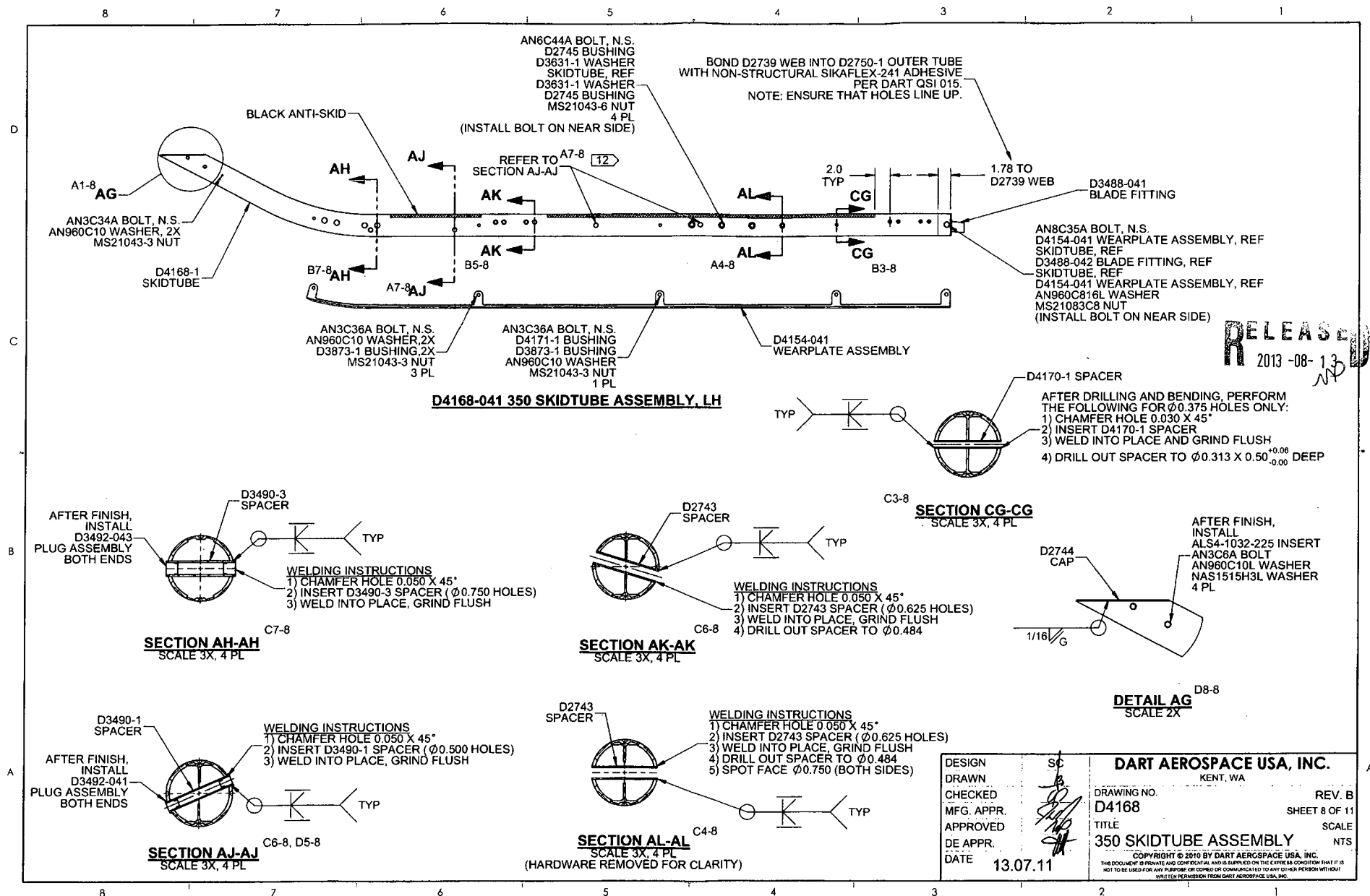
SECTION AF-AF
SCALE 3X, 4 PL

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2013-08-13
JMP

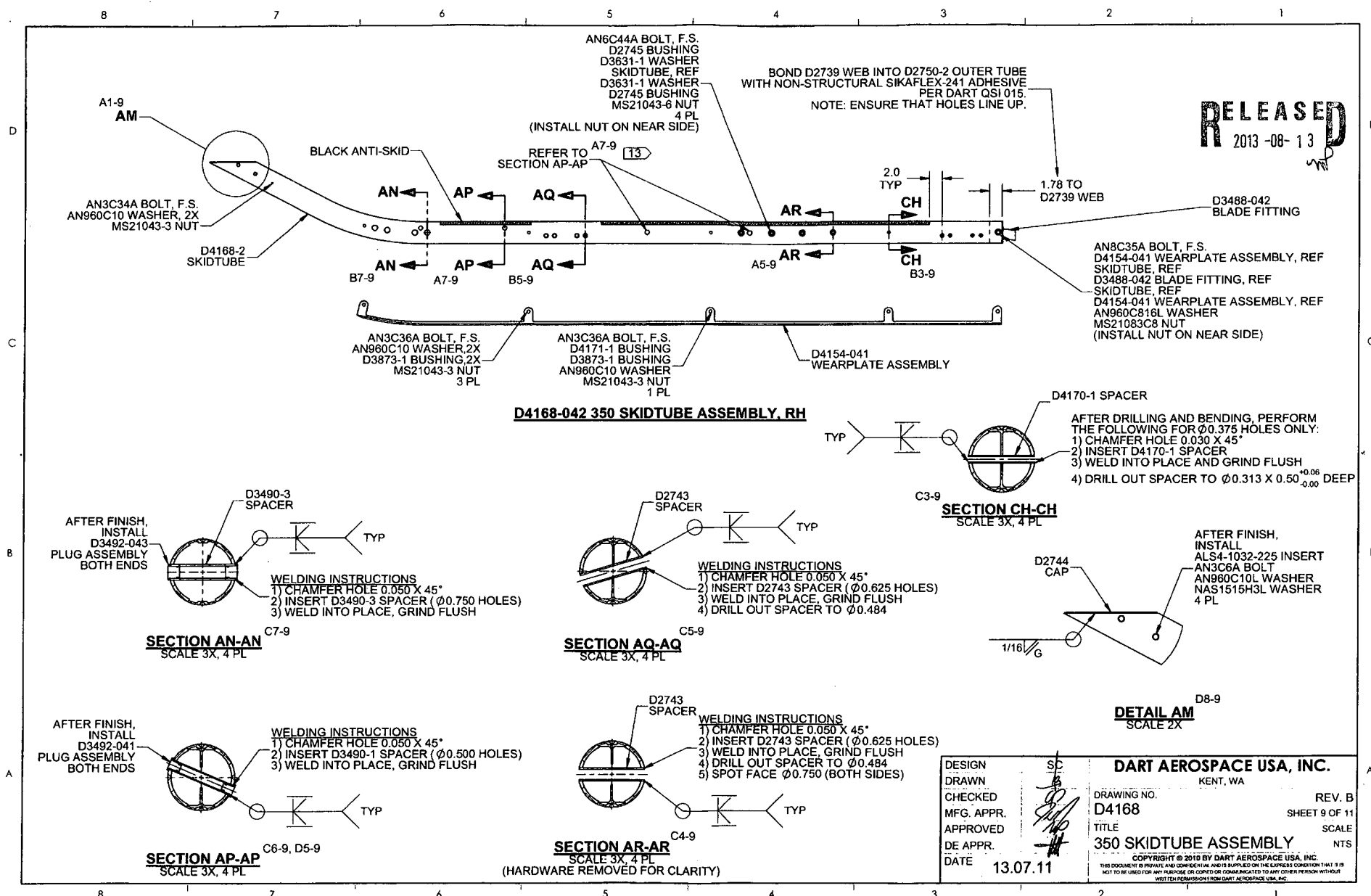
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APPROVED
DE APPR.
DATE 13.07.11

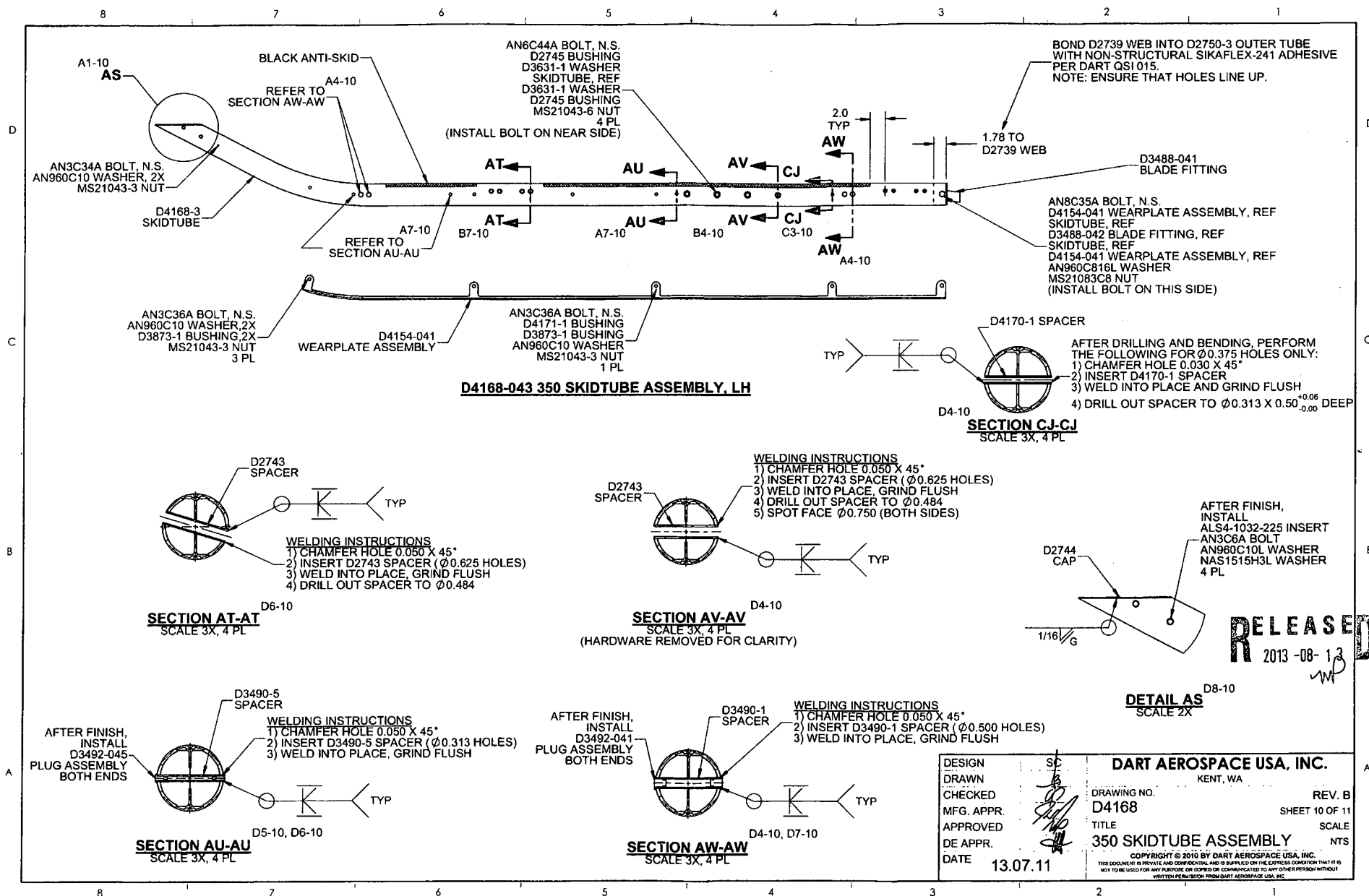
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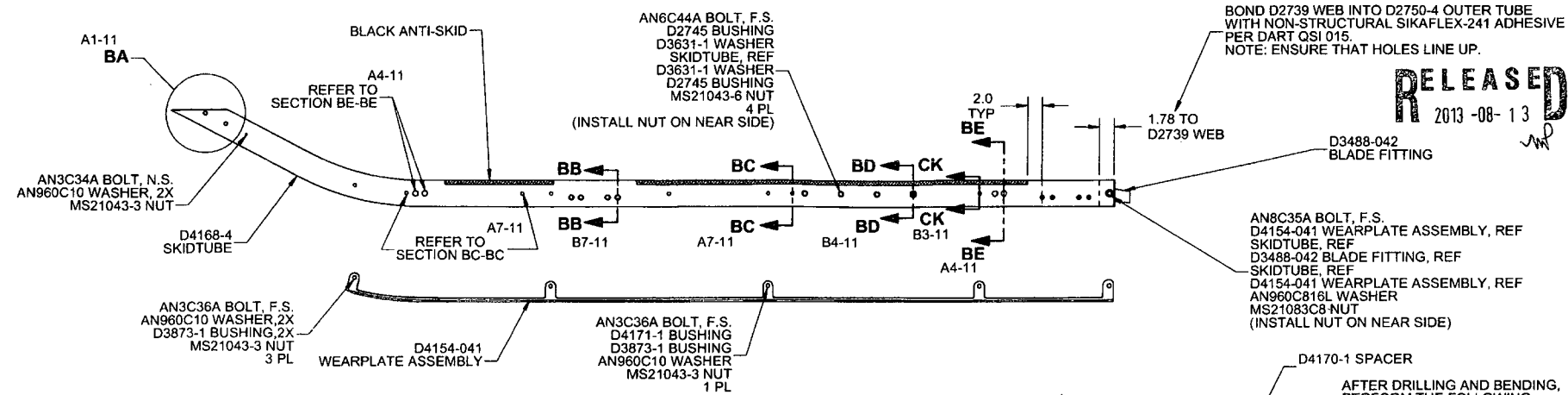


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2013-08-13

D4168-044 350 SKIDTUBE ASSEMBLY, RH

SECTION BB-BB
SCALE 3X, 4 PL

SECTION BD-BD
SCALE 3X, 4 PL
(HARDWARE REMOVED FOR CLARITY)

SECTION CK-CK
SCALE 3X, 4 PL

SECTION BC-BC
SCALE 3X, 4 PL

SECTION BE-BE
SCALE 3X, 4 PL

DETAIL BA
SCALE 2X

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APPROVED		DE APPR.		SHEET 11 OF 11	
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